

Amendments to the Claims:

Please amend claim 1.

Please cancel claims 3, 6, and 19.

These amendments introduce no new matter and support for the amendment is replete throughout the specification and claims as originally filed. These amendments are made without prejudice and are not to be construed as abandonment of the previously claimed subject matter, or agreement with any objection or rejection of record.

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A method for determining the presence of host cell proteins in a sample, the method comprising:

(a) capturing host cell proteins from a sample onto a biochip having a solid support comprising a mixture of biospecific affinity reagents bound to the solid support and comprising a mixture of polyclonal antibodies that specifically bind host cell proteins of a particular host organism; ~~and,~~

(b) detecting the captured proteins by mass spectrometry to produce a mass spectrum comprising molecular masses of the captured proteins or ionized fragments thereof; and

(c), analyzing the mass spectrum, thereby determining the presence of the captured-host cell protein contaminants in the sample.

2. (Original) The method of claim 1, wherein the sample is selected from cell culture supernatant, organ extracts, a sample derived from a transgenic animal, a sample derived from a transgenic plant, a sample derived from a transgenic egg or a biological fluid.

3. (Cancelled)

4. (Original) The method of claim 1, wherein the affinity reagent comprises IgG immunoglobulins.

5. (Original) The method of claim 1, wherein the solid support comprises a protein biochip.
6. (Cancelled)
7. (Previously presented) The method of claim 1, wherein the solid support comprises a surface enhanced laser desorption/ionization biochip on which the mixture of biospecific affinity reagents is immobilized before or after capturing the host cell proteins.
8. (Original) The method of claim 7, wherein surface enhanced laser desorption/ionization comprises applying a matrix material to the biochip before laser desorption/ionization.
9. (Original) The method of claim 7, wherein the surface enhanced laser desorption/ionization biochip comprises a surface-enhanced neat desorption surface.
10. (Original) The method of claim 1, wherein the solid support comprises a chromatographic resin.
11. (Original) The method of claim 10, wherein the resin comprises a material selected from ceramic, glass, metal, an organic polymer, and combinations thereof.
12. (Previously presented) The method of claim 10, wherein detecting comprises washing unbound molecules from the resin, eluting captured host cell proteins from the resin, and detecting eluted host cell proteins.
13. (Original) The method of claim 10, wherein the solid support is a chromatographic resin derivatized with a capture molecule that binds the affinity reagent.
14. (Original) The method of claim 13, wherein the affinity reagent is an antibody and the capture molecule is Protein A, Protein G, or a mercaptoheterocyclic ligand.
15. (Original) The method of claim 1, wherein the host cell proteins are captured on a solid support derivatized with the affinity reagent.
16. (Original) The method of claim 1, wherein the host cell proteins are bound to the affinity reagent and the affinity reagent is subsequently captured on the solid support.
17. (Original) The method of claim 16, wherein the solid support is a surface enhanced laser desorption/ionization biochip derivatized with a capture molecule that binds the affinity reagent.
18. (Original) The method of claim 17, wherein the affinity reagent is an antibody and the capture molecule is Protein A, Protein G, or a mercaptoheterocyclic ligand.
19. (Cancelled)

20. (Original) A method of following purification of a target protein comprising:

(a) profiling a sample comprising the target protein at one step of a purification process, wherein profiling comprises detecting the target protein in the sample and detecting host cell proteins in the sample using the method according to claim 1;

(b) subjecting the target protein to at least one purification step;

(c) profiling the sample comprising the target protein after the purification step, wherein profiling comprises detecting the target protein in the sample and detecting host cell proteins in the sample using the method according to claim 1; and,

(d) comparing the relative amounts of the target protein and the host cell proteins in the sample detected by profiling.

21. (Original) The method of claim 20, wherein the target protein comprises a recombinant protein.

22. (Cancelled)

23. (Cancelled)